

CLAIMS

We claim:

1 1. A method of performing mode selection in a video compression
2 and encoding system, said method comprising:
3 encoding and decoding with each possible encoding mode;
4 computing a distortion value for each encoding mode wherein said distortion
5 value reduces the effects of outliers;
6 computing a bit rate value for each encoding mode;
7 computing a Lagrangian value for each encoding mode using said distortion value,
8 said bit rate value, and a Lagrangian multiplier ; and
9 selecting an encoding mode using said Lagrangian values.

1 2. The method as claimed in claim 1 wherein computing said
2 distortion value comprises using a Huber function.

1 3. The method as claimed in claim 1 wherein computing said bit rate
2 value comprises a total number of bits that are necessary to encode a set of motion
3 vectors and a set of transform coefficients.

1 4. The method as claimed in claim 1 wherein said Lagrangian
2 multiplier comprises a slow varying Lagrangian multiplier as a function of a quantization
3 value.

1 5. The method as claimed in claim 1 wherein selecting an encoding
2 mode using said Lagrangian values comprises clustering said Lagrangian values and
3 selecting a mode 0 encoding method if said mode 0 encoding method is in a specific
4 cluster.

1 6. The method as claimed in claim 5 wherein said specific cluster
2 includes an encoding mode that produces a smallest Lagrangian value.

1 7. A method of performing mode selection in a video compression
2 and encoding system, said method comprising:
3 encoding and decoding with each possible encoding mode;
4 computing a distortion value for each encoding mode;
5 computing a bit rate value for each encoding mode;
6 computing a Lagrangian value for each encoding mode using said distortion value,
7 said bit rate value, and a Lagrangian multiplier wherein said Lagrangian
8 multiplier comprises a slow varying Lagrangian multiplier as a function of a
9 quantization value; and

10 selecting an encoding mode using said Lagrangian values.

1 8. The method as claimed in claim 7 wherein said distortion value
2 reduces the effects of outliers.

1 9. The method as claimed in claim 7 wherein computing said
2 distortion value comprises using a Huber function.

1 10. The method as claimed in claim 7 wherein computing said bit rate
2 value comprises a total number of bits that are necessary to encode a set of motion
3 vectors and a set of transform coefficients.

1 11. The method as claimed in claim 7 wherein selecting an encoding
2 mode using said Lagrangian values comprises clustering said Lagrangian values and
3 selecting a mode 0 encoding method if said mode 0 encoding method is in a specific
4 cluster.

1 12. The method as claimed in claim 5 wherein said specific cluster
2 includes an encoding mode that produces a smallest Lagrangian value.

1 13. A method of performing mode selection in a video compression
2 and encoding system, said method comprising:
3 encoding and decoding with each possible encoding mode;
4 computing a distortion value for each encoding mode;
5 computing a bit rate value for each encoding mode;
6 computing a Lagrangian value for each encoding mode using said distortion value,
7 said bit rate value, and a Lagrangian multiplier;
8 clustering said Lagrangian values; and
9 selecting an encoding mode using said Lagrangian values by selecting a mode 0
10 encoding method if said mode 0 encoding method is in a specific cluster.

1 14. The method as claimed in claim 13 wherein said distortion value
2 reduces the effects of outliers.

1 15. The method as claimed in claim 13 wherein computing said
2 distortion value comprises using a Huber function.

1 16. The method as claimed in claim 13 wherein computing said bit rate
2 value comprises a total number of bits that are necessary to encode a set of motion
3 vectors and a set of transform coefficients.

1 17. The method as claimed in claim 13 wherein said Lagrangian
2 multiplier comprises a slow varying Lagrangian multiplier as a function of a quantization
3 value.

1 18. The method as claimed in claim 13 wherein said specific cluster
2 includes an encoding mode that produces a smallest Lagrangian value.

1 19. The method as claimed in claim 13, said method further
2 comprising:
3 selecting an encoding mode that produces a smallest Lagrangian value if said
4 mode 0 encoding method is not in a specific cluster.